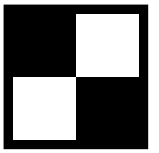


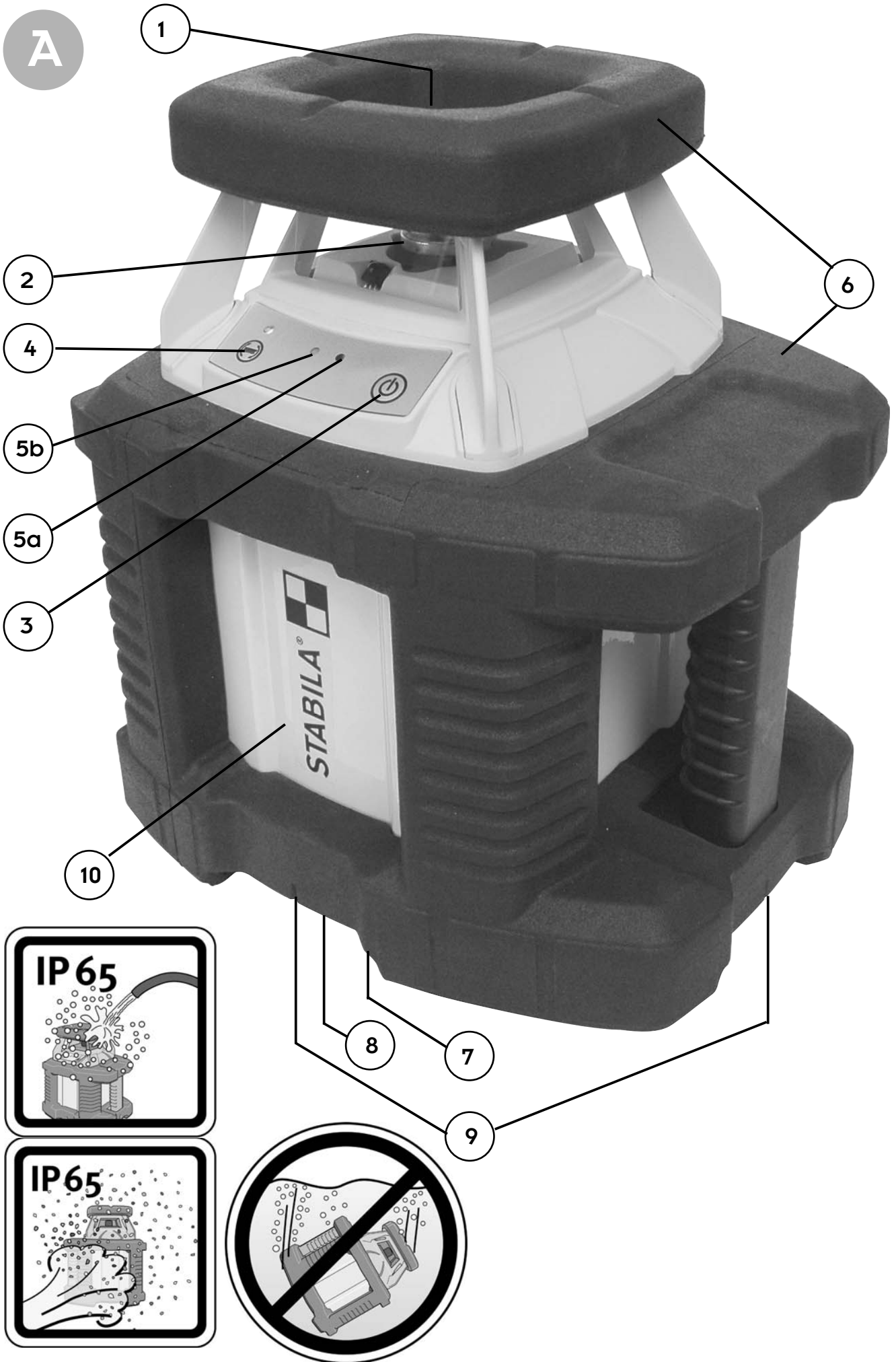
**STABILA®**



# Laser LAR-200

**en** Operating instructions

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## Operating instructions

The STABILA LAR-200 rotation laser is an easy to operate rotation laser for horizontal levelling and plumb lines in a sealed housing (IP65). It is self-levelling in a range of  $\pm 5^\circ$ . The laser beam can be received at distances of up to 150 m with the use of a receiver, even when it is no longer visible to the naked eye.

We have endeavoured to explain the unit's handling and functioning in as clear and comprehensible manner as possible. If, however, you still have any unanswered questions, we should be pleased to provide advice over the telephone at any time on the following telephone number:

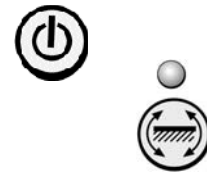
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### Main components

Splitter pentaprism SP:

- (1) SP1: vertical beam emission aperture
  - (2) SP2: rotation beam emission aperture
  - (3) ON/OFF switch
  - (4) Permanent adjustment On/Off selector switch
- LEDs for displaying:
- (5a) Red LED: battery voltage and overheat
  - (5b) Green LED: Operating mode ON or READY / OK
  - (6) Shock protection
  - (7) Battery compartment cover
  - (8) 5/8" threaded connector for tripod
  - (9) 4 markings to create a plumb-line laser function
  - (10) Housing: hoseproofed sealings and dustprotected acc. to standard IP65
- Do not submerge the laser !



### Recycling programme for our EU customers:

In accordance with the WEEE regulations, STABILA provides a disposal programme for electronic products at the end of their service life. For more details, please contact: +49 / 6346 / 309-0



## NB:

In Class II laser equipment, your eyes are protected from accidental, short-term exposure to the laser beam by the lid-closing reflex and/or the reflex reaction to turn one's head. This equipment can therefore be used without additional protective measures. Nevertheless, you should not look directly into the laser beam.

**Do not let the unit fall into children's hands!**



EN 60825-1 : 03 10



The laser goggles enclosed with these units are not safety goggles. They are designed to make the laser light easier to see.

## Main applications:

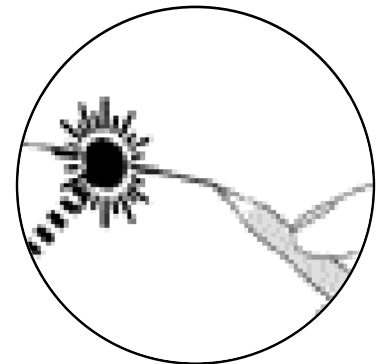
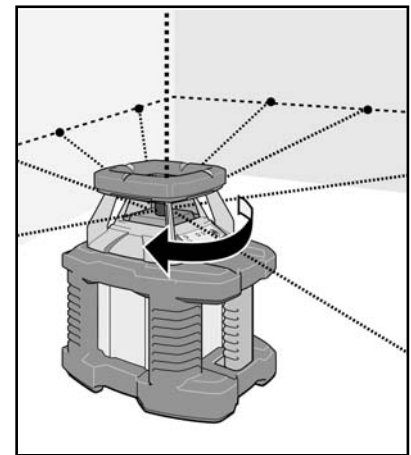
### Levelling

Set the unit on a firm base or a tripod.

**Tip:** It is useful to set up the rotation laser centrally to the subsequent measurement points.

Pressing the button (3), switches the rotation laser ON and it starts to level itself automatically. Once levelling is complete, the laser begins to rotate. Depending on the brightness of the ambient light, you can either use the laser beam, if easily visible, for marking directly (always ensure that you mark the centre of the laser beam) or the beam can be received via the receiver.

Please note that the centre of laser dot is marked!



## Operating modes:

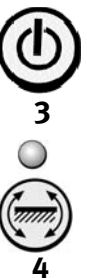
### Commissioning

#### - Automatic mode with height of tool alert function

For safety reasons, the rotation laser always switches itself off all when it is switched on in this operating mode!

The unit can be switched on by briefly tapping button (3). Automatic levelling starts immediately. The green LED (5b) lights up and the LED (4) flashes. The splitter pentaprism begins to rotate and the laser beam comes on. After automatic levelling, you have approximately 30 seconds in which to set the laser unit in the desired position, e.g. to adjust its height, set it on a tripod, etc.

During this time, minor discrepancies from the horizontal are ironed out. Then the laser unit switches to monitored Automatic mode and the LED (4) goes out.



## Height of tool alert function



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Minor tremors or vibrations are automatically compensated for only up to a set threshold. If these disruptive influences are greater than this, the height of tool alert function engages and rotation stops. The laser beam switches off and the LED (4) flashes. You must switch the laser unit off using button (3) and then switch it on again.



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Disruptive influences that can lead to adjustment of the precise alignment and the laser beam's setting do not therefore go unnoticed. When there are disruptive influences present, the height of tool alert function requires the laser to be checked and/or reset to the desired position.



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## Automatic mode with subsequent readjustment

In many operating conditions (e.g. on strongly vibrating surfaces), it is useful for the rotation laser to level itself constantly to eliminate any discrepancies that may arise. After switching it on with button (3), the unit can be switched to this mode by pressing button (4). The red LED (4) indicates that this mode is active.



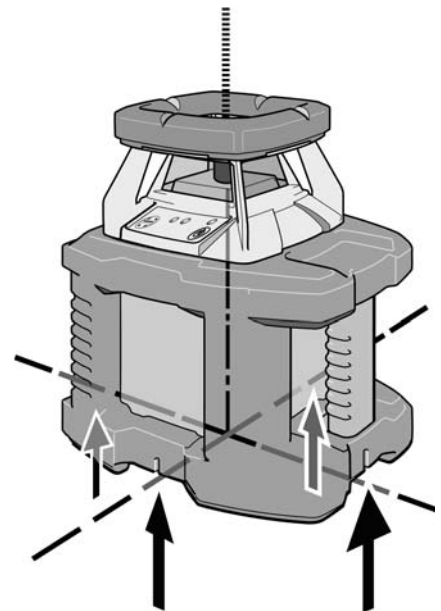
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Minor discrepancies from the horizontal (from minor tremors) are compensated for. If these disruptive influences are too great, rotation stops, the laser beam switches off and the laser unit levels itself again automatically. Once re-levelling is complete, the splitter Pentaprism starts to rotate again.

## Use as a Plumb-line Laser

The laser can be aligned precisely on a marked cross using the 4 markings (9) on the base to transfer a plumbline from the floor marking to the ceiling. The point where the cross intersects corresponds to the SP1 vertical laser emitter.

A correct result can only be obtained in Automatic mode with the unit set on a level surface!

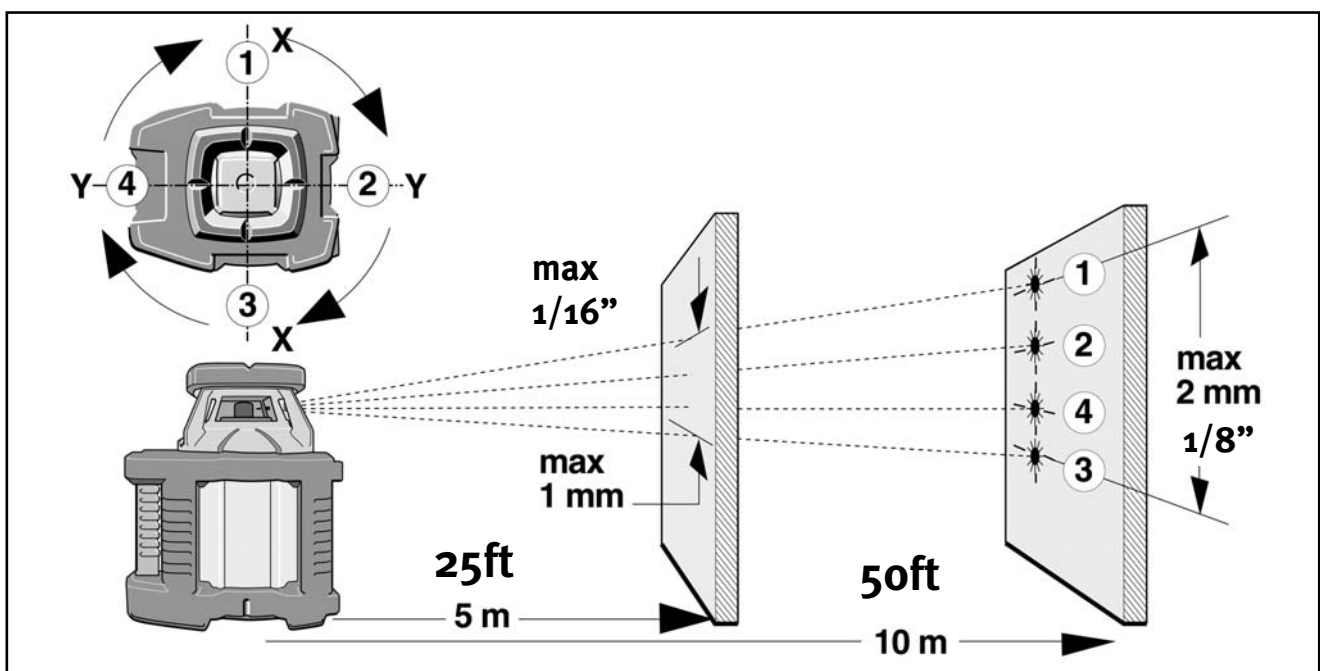


## Checking the calibration

The LAR-200 rotation laser has been designed for building site use and leaves our factory perfectly calibrated. As with any precision instrument, however, its calibration must be regularly checked. The unit should be checked before starting any new tasks, particularly when the unit has been exposed to strong vibrations. After an impact, the unit should be checked throughout its whole self-levelling range.

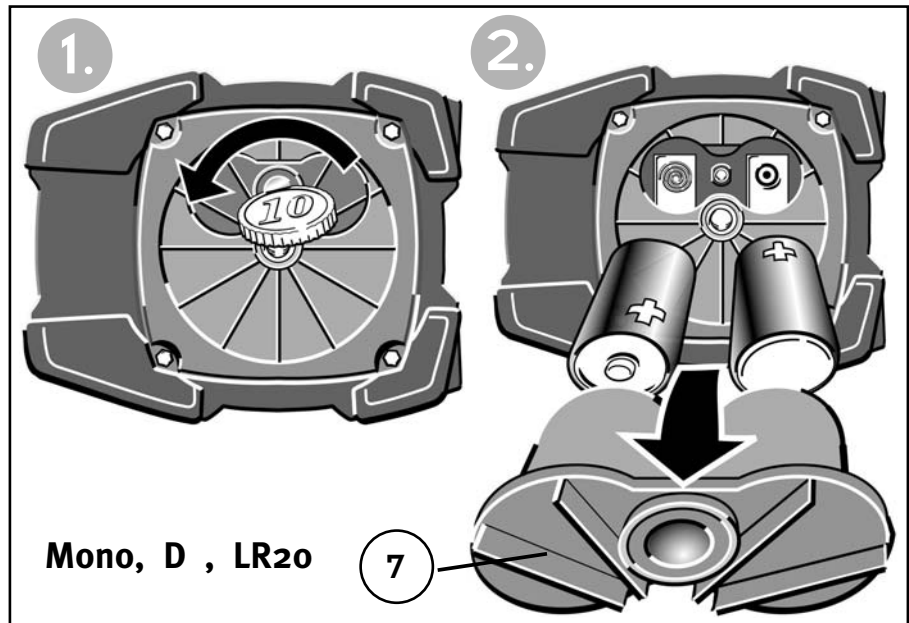
## Horizontal checking

1. Set up the rotation laser on a smooth, level surface or on a tripod 25 ft or 50 ft / 5m or 10m from a wall with the front facing the wall.
2. Switch the unit on (button 3) and wait for it to level automatically.
3. Mark the position of the visible laser dot on the wall - Measurement 1 (Point 1). Because the diameter of the beam depends on the distance, you must always only use the centre of the dot!
4. Turn the complete unit 90° without altering the height of the laser (i.e. the tripod must not be altered). Let the unit level automatically again.
5. Mark the position of the visible laser dot on the wall (Point 2).
6. Repeat steps 4 and 5 to obtain Points 3 and 4.
7. If the difference between the 4 control points is less than 1/16" at 25ft (1mm at 5m) distance and 1/8" at 50ft (2 mm at 10m) distance the permissible tolerance of  $\pm 1/8"$  over 100ft ( $\pm 0.1$  mm/m) is being maintained. Points 1 and 3 on the unit's y-axis and points 2 and 4 on the unit's x-axis now correspond.



## Replacing the batteries

Unfasten the catch on the battery compartment cover: remove the cover and the batteries. Insert new batteries following the instructions in the battery compartment. Only use 1.5V mono cells (size D)!



### Tip:

Remove the batteries if the unit will not be used for a long period !

## Operating status display and error messages via the LEDs

Illuminated <b>green</b> LED	-> laser in operation
Illuminated <b>green</b> LED + laser beam <b>flashing</b>	-> The laser levels itself automatically
<b>Flashing green</b> LED + laser beam <b>flashing</b>	-> The unit is inclined too much + is outside the self-levelling range + the laser cannot level itself automatically
Illuminated <b>red</b> LED	-> laser in operation -> battery voltage very low -> battery replacement required imminently
Illuminated <b>red</b> LED + laser beam <b>flashing</b>	-> The laser levels itself automatically -> Battery voltage very low -> Battery replacement required imminently
<b>Flashing red</b> LED + laser beam <b>flashing</b>	-> Battery voltage very low -> The unit is inclined too much + is outside the self-levelling range + the laser cannot level itself automatically

## Care and maintenance

- Dirty lens glass on the beam emitter detracts from the quality of the beam. It should be cleaned with a soft cloth.
- Clean the laser unit with a damp cloth. Do not spray or immerse the unit! Do not use solvents or thinners!

The LAR-200 rotation laser must be handled carefully, in the same way as any precision optical instrument.

## Technical data

Laser type:	Red diode laser, wavelength 650 nm
Output:	< 1 mW, Laser Class 2 to EN 60825-1:03-10
Self-levelling range:	ca. $\pm 5^\circ$
Levelling accuracy:	$\pm 0,1$ mm/m or $\pm 1/8''$ over 100 ft
Batteries:	2 x 1,5 V Mono cells Alkaline, Size D, LR20
Operating life:	Approx. 120 hours
Operating temperature range:	-10°C to +60°C or 14°F to +140°F
Storage temperature range:	-20 °C to +70 °C or -4°F to +158°F
Subject to technical modifications.	